

**GOVERNMENT OF INDIA
POWER
LOK SABHA**

UNSTARRED QUESTION NO:889
ANSWERED ON:20.07.2017
Water Requirement for Thermal Plants
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Will the Minister of POWER be pleased to state:

- (a) whether thermal power plants require large quantities of water during power generation;
- (b) if so, the details thereof;
- (c) whether thermal power plants have been set up in water scarce areas of Uttar Pradesh making those areas more water scarce;
- (d) if so, the details thereof; and
- (e) the remedial measures proposed to be taken by the Government in the matter?

Answer

THE MINISTER OF STATE (INDEPENDENT CHARGE) FOR POWER,
COAL, NEW & RENEWABLE ENERGY AND MINES

(SHRI PIYUSH GOYAL)

(a) & (b) : Water is one of the key input requirements for thermal power generation. Water is required for process cooling in the condenser, ash disposal, removal of heat generated in plant auxiliaries, boiler make up for steam generation and various other plant consumptive uses like service water, potable water etc. Typical consumptive water requirement for a coal based thermal power plant with wet cooling tower system is around 3.0 m³/MWh. For gas based combined cycle power plant, the typical consumptive water requirement with wet cooling tower system is around 1.4 m³/MWh. The major part of the consumptive water goes in meeting the cooling tower make-up requirement of the plant.

(c) to (e) : As reported by M/s Uttar Pradesh Rajya Vidyut Utpadan Nigam (UPRVUNL), M/s Neyveli Uttar Pradesh Power Ltd. (NUPPL) and M/s NTPC Ltd., no operational/under construction (Central Sector/State Sector) thermal power plants have been set up in water scarce areas of Uttar Pradesh.

The measures adopted to reduce consumption of water in Thermal Power Plants are as below:

- i) Ash water recirculation system- Water from ash pond is recovered and reused in the ash handling system.
- ii) Dry fly ash handling system & High concentration slurry disposal system (HCSD)- These ash handling techniques reduce the ash handling water requirement thereby reducing the water consumption.
- iii) Operating cooling towers at higher Cycle of Concentration (COC). This reduces the waste water generated by the plant.
- iv) Effluent Treatment Plants (ETP)- Treating the waste water produced in the plant and reuse it for low grade applications like ash handling, coal dust suppression and gardening etc.
- v) Zero water discharge system – Suitably treating the total waste water produced in the plant with no discharge of water from plant boundary so as to reduce the consumptive water requirement of the power plant.

Over the years, consumptive water requirement for thermal power plants for closed cycle CW system has been reduced from about 7 m³/MWh to about 3m³/MWh.

vi) Provisions for use of treated sewage water by thermal power plants located within a distance of 50 km radius of municipality/ local bodies have been made in the Tariff Policy, 2016.
